

Section II (Remarks)

A. Summary of Amendment to the Claims

By the present Amendment, claim 1 has been amended and claims 11 and 12 have been cancelled. Claims 2 and 3 were previously cancelled. No new matter within the meaning of 35 U.S.C. §132(a) has been introduced by the foregoing amendments.

The amendments made herein are fully consistent with and supported by the originally-filed disclosure of this application. Claim 1 has been amended to incorporate the subject matter of now-cancelled claims 11 and 12. Amendment of claim 1 is further supported at page 6, lines 13-17 and Fig. 1 of the application, as originally filed.

Thus, upon entry of the amendments, claims 1 and 4-10 will be pending, of which claims 8 and 10 are withdrawn.

B. Allowable Subject Matter

In the Office Action mailed January 29, 2010, the examiner objected to claims 11 and 12 “as being dependent upon a rejected base claim, but...allowable if rewritten in independent form including all of the limitations of the base claim...” Specifically, the examiner reasoned that claims 11 and 12 are allowable as “...directed to a protein chip of a S-L-SP form comprising a solid substrate (S) and a substrate peptide (SP) immobilized on the solid substrate (S) by a linker protein (L) of leptin or malic enzyme, wherein the SP is fused with L in the form of [dimer] of monomer-proline-monomer and multimer-proline-multimer.” (Office Action mailed January 29, 2010, p. 10-11.)

In accordance with the examiner's statements of allowability, claim 1 has been amended to incorporate the subject matter of claims 11 and 12. As amended, claim 1, and claims 4-7 and 9 (and withdrawn claims 8 and 10), which depend directly or indirectly from claim 1, are drawn to an S-L-SP form where the SP is fused with the L in the form of a dimer of monomer-proline-monomer or a multimer of multimer-proline-multimer. At page 11 of the Office Action mailed January 29, 2010, the examiner indicated that such subject matter is allowable and that “...the prior art fails to disclose that the SP is fused with the L in the form of dimer [sic] of monomer-proline-monomer and multimer-proline-multimer...”

As amended, claims 1 and 4-7 and 9 are allowable.

C. Rejection Under 35 U.S.C. §103

In the Office Action mailed January 29, 2010, the examiner rejected the pending claims under 35 U.S.C. §103. In particular, claims 1, 5 and 6 were rejected over MacBeath et al., *Science*, Sept. 8, 2000, vol. 289, pp. 1760-1763 (hereinafter “MacBeath et al.”) in view of U.S. Patent No. 6,335,176 (hereinafter “Inglese et al.”), U.S. Patent Application Publication No. 2002/0058273 (hereinafter “Shipwash”), and U.S. Patent Application Publication No. 2002/0058791 (hereinafter “Goldschneider et al.”). Claim 4 was rejected in view of the above combination of references, as applied to claim 1, from which it depends, and further in view of U.S. Patent Application Publication No. 2003/0186229 (hereinafter “Tsien et al.”). Claims 7 and 9 were rejected in view of the above combination of references, as applied to claim 1, from which they depend, and further in view of U.S. Patent Application Publication No. 2002/0028463 (hereinafter “Duffy et al.”).

Applicants respectfully draw the examiner’s attention to Section I above, where claim 1 has been amended to include the subject matter of now-cancelled claims 11 and 12, reciting an S-L-SP form where the SP is fused with the L in the form of a dimer of monomer-proline-monomer or a multimer of multimer-proline-multimer. Claims 11 and 12 were indicated in the Office Action mailed July 29, 2010 as being allowable if rewritten in independent form. By incorporation of the subject matter of claim 11 and 12 into independent claim 1, the subject matter of both of claims 11 and 12 is now present in independent form in amended claim 1. Claim 1 has been further amended such that it does not contain recitation of a peptide monomer.

The combination of MacBeath et al., Inglese et al., Shipwash and Goldschneider et al. is cited by the examiner as rendering the claims obvious, where “MacBeath in view of Inglese and Shipwash teaches the claimed invention except that the linker protein is fused with substrate peptides in the form of peptide monomer, a dimer [sic] of monomer-proline-monomer, or a multimer where monomers are linked to each other by a praline [sic].” (Office Action mailed January 29, 2010, p. 7.) However, the examiner acknowledged that “...the prior art fails to disclose that the SP is fused with the L in the form of dimer [sic] of monomer-proline-monomer and multimer-proline-multimer...” (Office Action mailed January 29, 2010, p. 11; emphasis added.)

Amended claim 1 recites a protein chip where the SP in the form of a dimer of monomer-proline-monomer or a multimer of multimer-proline-multimer is fused with the L. Accordingly, claim 1 is not obvious in view of the cited prior art. Claims 4-10 are of dependent form under claim 1, and correspondingly distinguished over the art.¹

Specifically with regard to claim 4, Tsien et al. does not remedy the deficiencies of the combination of MacBeath et al., Inglese et al., Shipwash and Goldschneider et al. Tsien et al. was cited as “teach[ing] that kemptide can be used for linking proteins.” (Office Action mailed January 29, 2010, p. 8.) However, the combination of MacBeath et al., Inglese et al., Shipwash, Goldschneider et al. and Tsien et al. fails to provide a derivative basis for a protein chip of S-L-SP form, where the SP in the form of a dimer of monomer-proline-monomer or a multimer of multimer-proline-multimer is fused with the L.

Therefore MacBeath et al. in view of Inglese et al., Shipwash, Goldschneider et al. and Tsien et al. does not render the invention of claim 4 obvious.

With regard to claims 7 and 9, Duffy et al. does not remedy the deficiencies of the combination of MacBeath et al., Inglese et al., Shipwash and Goldschneider et al. Duffy et al. was cited as “teach[ing] a protein chip of a S-L-SP form...wherein a substrate peptide...is immobilized on a solid substrate...by the mediation of a linker protein...[and where] the reactive protein is an antibody labeled with fluorescent tags...” (Office Action mailed January 29, 2010, p. 10.) However, the combination of MacBeath et al., Inglese et al., Shipwash, Goldschneider et al. and Duffy et al. fails to provide a derivative basis for a protein chip of S-L-SP form, where the SP in the form of a dimer of monomer-proline-monomer or a multimer of multimer-proline-multimer is fused with the L.

Therefore MacBeath et al. in view of Inglese et al., Shipwash, Goldschneider et al. and Duffy et al. does not render the invention of claims 7 and 9 obvious.

Accordingly, withdrawal of the rejection of claims 1, 4-7 and 9 under 35 U.S.C. § 103 is respectfully requested.

¹ If an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). (MPEP §2143.03)

CONCLUSION

Based on the foregoing, all of applicants' pending claims 1, 4-7 and 9 are patentably distinguished over the art, and in form and condition for allowance. The examiner is requested to favorably consider the foregoing and to responsively issue a Notice of Allowance.

January 29, 2010 Office Action without extension was set at three months, or April 29, 2010. Applicants hereby request a three month extension of time under 37 CFR § 1.136 to extend the deadline for response to and including July 29, 2010. Payment of the extension fee of \$555.00 specified in 37 C.F.R. § 1.17(a)(3), as applicable to small entity, is being made by on-line credit card authorization at the time of EFS submission of this Response. Should any additional fees be required or an overpayment of fees made, please debit or credit our Deposit Account No. 08-3284, as necessary.

If any issues require further resolution, the examiner is requested to contact the undersigned attorneys at (919) 419-9350 to discuss same.

Respectfully submitted,

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